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## A CHAPTER IN THE LIFE HISTORY OF THE WREN-TIT

By WALTER C. NEWBERRY

WITH TWO PHOTOS BY TRACY I. STORER

DURING the nesting season of 1915 it was the writer's pleasant privilege to closely observe a pair of Intermediate Wren-tits (*Chamaea fasciata fasciata*). Many things were noted of much interest, supposedly because the bird was an entirely new species in my own experience. But when it came to an attempt to find out what other observers might have learned about this unique bird, so as to make comparisons with the results of my own observations, I was surprised to find that practically nothing had been published in regard to the nesting behavior of any of the subspecies of the wren-tit. The index to bird literature maintained at the California Museum of Vertebrate Zoology, showed only bare records of occurrence in many localities, and a few nesting dates and brief descriptions of nests and eggs. The following notes are, therefore, offered to CONDOR readers in the belief that they will add something to our knowledge of the life history of the wren-tit.

A piece of vacant property in North Cragmont, Berkeley, with an area of about 100 by 150 feet, was the chosen foraging ground of this pair of wren-tits and they were never observed to wander farther afield. Along one edge of the lot was a small creek with thick clumps of willow on either bank. The rest of the lot occupied higher ground and was scatteringly covered with thick clumps of



Fig. 27. NEST OF THE WREN-TIT IN BACCHARIS BUSH

poison oak (*Rhus diversiloba*), chaparral brush (*Baccharis pilularis*), and blue witch (*Solanum umbelliferum*). The open spaces were grown up with weeds such as cow parsnip (*Heracleum lanatum*), horehound (*Marrubium vulgare*), teasel (*Dipsacus fullonum*), and long grass. The only tree on the higher portion of the lot was an elderberry (*Sambucus glauca*) about twenty feet high.

The partially built nest was discovered on March 23, and only cautious approaches were made while construction was going on for fear of disturbing the birds and causing them to abandon operations. But few facts were noted during this time. Apparently both birds were engaged in building the nest, this conclusion being drawn from the facts that the two were in sight the greater part of the time and that at no time while the birds were under observation throughout the entire nesting period could the sexes be distinguished. Another thing noted was that the birds always approached the nest over the same route and each time with much caution, this being the case as long as the nest was occupied.

They always slipped quietly through the brush back of the nest, coming into view almost directly under it and on the ground, and then mounting to it from twig to twig.

When visited at 7:30 A. M. March 25, the nest was completed and neither bird was in evidence. It was a rather deep cup-shaped nest, compactly but lightly built, and laced, for its principal support, 21 inches from the ground, to the side of a perpendicular stalk of teasel coming up through the clump of baccharis, a few smaller twigs serving to steady it. The materials used in its construction were weed and bark fibers and dried grass, with a thin inner lining of dried grass and horse hair. The following measurements were made after the young had left and when the nest was slightly distorted and otherwise rather the worse for wear: Outside, depth 2.75 inches, diameter 3 inches; inside, depth 2 inches, diameter 2.90 inches.



Fig. 28. WREN-TIT ON ITS NEST

From March 25 until March 30 there was no change in conditions, and neither bird was seen near the nest. The weather turned cold and rainy during this interval and it is possible that further operations were delayed on that account. March 31 at 4 P. M. one egg was in the nest. Coincident with this the weather had become warm and dry. On April 1, the nest contained two eggs. One bird, assumed to be the female, was flushed from the nest; the other was singing nearby.

April 2, at 4 P. M., there were three eggs in the nest; female (?) flushed, other bird not seen. April 3, 5 P. M., no change. Parent bird flushed from nest. April 4 no change. A note was made at this time which perhaps suggests why

so few wren-tits' nests are found. The bird remains on the nest, which is well concealed in the leafy portion of the bush, and is only flushed when the twigs within three or four inches are disturbed. Then, instead of a demonstration against the intruder or an attempt to lure him away, she slips quietly over the side of the nest and is gone, taking full advantage of any cover that can be found.

April 5, 5 P. M., parent bird sitting close on nest. From this date until April 20 incubation was carried on, one or the other of the pair being upon the nest practically all the time. The photographs accompanying this article were taken April 9, when the bird proved to be a fearless subject. April 20, when observed at 7:30 A. M., all the eggs had hatched and the nest contained three young. Thus the length of the period of incubation (from the laying of the third egg) was eighteen days, or figuring the time from April 5, from which date one or the

other of the pair was upon the nest continually, it was fifteen days, this latter probably being more exact since the eggs hatched simultaneously.

From April 20 until May 1 several observations were made daily. One or the other of the pair covered the young continually, but not once were they seen feeding. However, on April 23, when I was leaning over the nest, a slight noise caused one of the young to raise its head and open its mouth. On April 26 the young had almost doubled in size, their eyes were beginning to open, and the feather tracts had become clearly defined, with indications of pin feathers upon the crown of the head and along the edges of the wings. This was the first indication of plumage up to this time, for the birds appeared to be perfectly naked when hatched, not even down feathers being in evidence. By May 1, the young had commenced to feather out. The crown of the head, scapulars, inter-scapulars and underparts were becoming well-clad, and the flight feathers on the wings were breaking through their sheaths. The tail feathers were still only rudimentary.

Unfortunately no further observations were made until May 4. On that date, between 9 and 10 A. M., both birds were busily engaged in foraging for food and brought fifteen capacity loads to the nest at fairly regular intervals. The food was all secured in the immediate vicinity and each load was divided as equally as possible among the three hungry youngsters. A small green caterpillar, a larva of one of the Geometrid moths, seemed to be the favorite, or perhaps the most available, article of food. A few angle-worms were brought, among other things not clearly recognized, and one small white moth was disposed of easily, wings and all.

The old bird would sing loudly when a short distance from the nest, even when carrying two or three caterpillars in its bill. Always when a foot or so from the nest it would give a soft clucking sound which at once produced intense excitement among the young and caused much stretching of necks and gaping of bills. I hardly believe that the wren-tits practice regurgitation, although they would place their seemingly empty bills deep into the mouths of the young and instantly still their clamoring for food. Also on nearly every trip to the nest with food, fragments of excrement were carefully removed, carried a little distance away and dropped.

On May 5, between 8:30 and 9:00 A. M., nine trips with food were made, and one of the young in its impatience climbed out of the nest and spent a few moments perched upon a twig six or eight inches away, as if hoping to intercept the old birds and secure more than its share of food. This effort was unavailing as it received only its lawful share. Two fairly large winged moths were eagerly accepted as food, although swallowed only with much difficulty.

May 6 at 1:30 P. M., the young were fed twice within five minutes, when apparently the great moment had arrived and as if at a signal all three, now fully feathered, fluttered from the nest and remained perched contentedly upon nearby branches. Thus, sixteen days from the time of hatching, the nest had ceased to be a necessity and was abandoned. On May 7 the young were easily located, still only a short distance from the nest, by the actions of the old birds who for the first time seemed truly worried at a strange presence, and gave frequent voice to their alarm note which Grinnell (CONDOR, xv, 1913, p. 179) has described as a "harsh clicking sound, rather loud and set off in abrupt segments." The young were still, figuratively speaking, under the wing of the parent birds when last seen, and still seemingly unable to forage for themselves.

They would rather impatiently call attention to themselves by giving utterance to two high pitched clear notes similar in tone and interval to the beginning of the song of the mature bird.

To summarize briefly the information gained by this series of observations: March 23, nest partially built; March 25, nest completed; March 31, one egg in the nest; April 1, two eggs in the nest; April 2, three eggs in the nest; April 5, brooding began; April 20, all eggs hatched, incubation thus requiring 15 days, or, at most, 18 days; April 26, young open mouths at a slight noise although feeding had not been observed, and they show well-developed hair-like pin feathers; May 4, young well feathered out, and are fed on an average of 16 times an hour; May 6, birds flew from the nest, 16 days after hatching.

*Berkeley, California, January 20, 1916.*

## THE NEW MUSEUM OF COMPARATIVE OÖLOGY

By WILLIAM LEON DAWSON, Director

ON THE 27th of January last, a state charter was granted to the Museum of Comparative Oölogy of Santa Barbara. This was the first notice to the public of a movement which had been quietly launched several months before and which, needless to say, had profited by much private counsel, both scientific and lay, before making its corporate bow. At the request of the Editor of THE CONDOR, I am writing at some length of the *raison d'être* and purposes of the new institution and, more briefly, of its proposed methods and its personnel, of its building plans and its more immediate program.

An institution, like an invention, is the realization of a dream. Now it is of the very nature of dreams to appear fantastic, impractical, "visionary". But Professor Langley's dream of a heavier-than-air flying machine has become a substantial, if not a "sober", reality; and Mr. Smithson's vision of an institution "for the increase and diffusion of knowledge among men" has become the bulwark of science in America. However, the dreamer of the Museum of Comparative Oölogy claims no kinship with these illustrious men. He is only one of the crowd, dreaming over again a very ancient and most fantastic dream. For what farmer boy, seduced from the furrow by the warm breath of spring, has not turned aside to witness the drama of springtime as it was being enacted in a neighboring hedgerow! Those painted oval souvenirs, did they not symbolize for him his very interest in life? And what red-blooded youth, poring over his "cabinet" of birds' eggs, has not dreamed of a collection which should embrace not only the birds of his township or state or country, but the nests and eggs of the birds of the entire world? Of all who started down the vista of that golden dream, some few only persisted until their hoardings began to take on a faint color of value, scientific value. Finally one said, "It cannot be done by one alone. It cannot be done in a lifetime, not even by a millionaire. Come on, boys, let's do it *together!*" Coöperation, then, is to be the keynote of the Museum of Comparative Oölogy.

But is it an altogether fantastic task, this heaping together of all kinds of birds' eggs? Not a bit of it! *Qui bono?* To what end, then? To the end that we may interpret *life*. Some day it will appear as comical as it really is, that